

# Rehabilitation of Disease-Depleted Oyster Fisheries

by

H. R. Found and R. R. Logie

## FIRST EPIDEMICS WERE IN PRINCE EDWARD ISLAND

In 1915 oysters in Malpeque Bay, Prince Edward Island, started to die in large numbers from epidemic disease. By 1918 about 90% were dead. By 1937 similar epidemics had swept through all oyster areas of Prince Edward Island. Fortunately the epidemics were spaced out in this way. Otherwise the Prince Edward Island oyster fishery would have been destroyed.

## SURVIVORS WERE RESISTANT

It was discovered that about 10% of the oysters survived because they were truly resistant to the disease, rather than because they had not been exposed to it. More important still, these survivors produced large numbers of resistant young. In Malpeque Bay the resistant oysters were gathered onto leaseholds where they might cross-breed with one another.

## HOW PRINCE EDWARD ISLAND FISHERIES WERE REHABILITATED

By 1935, or about 20 years after the epidemic, the production of Malpeque Bay had been restored to its pre-disease level in this way. Even though the disease organism was still present the oysters were resistant to it and showed no ill effects.

The epidemic occurred in the important Charlottetown Harbour-Hillsborough Bay area of Prince Edward Island from 1935-37. But, in this case less-ees were able to get resistant oysters from Malpeque Bay for transplanting to their grounds. The fishery was restored in about 10 years and it is believed that the introduction of resistant stock was responsible for the shorter period of recovery.

In this manner all Prince Edward Island oyster fisheries have been restored and the oysters themselves are resistant to the so-called Malpeque Disease.

## EPIDEMICS IN NEW BRUNSWICK AND NOVA SCOTIA

In most oyster areas of New Brunswick and Nova Scotia oysters began to die in large numbers in 1955. By the end of 1956, 90% had perished. The epidemic is a year later on the north shore of Miramichi Bay and, so far, Caraquet Bay and Miscou Harbour, New Brunswick and the Bras d'Or Lakes, Nova Scotia have shown no serious numbers of deaths.

Although we cannot yet be sure of the organism causing any of these oyster diseases, they are all suspiciously similar in every way that we can compare them. It is thought that they are identical, or in other words, that all epidemics are due to Malpeque Disease.

## HOW NEW BRUNSWICK AND NOVA SCOTIA FISHERIES CAN BE REHABILITATED

Unlike what happened in Prince Edward Island where the epidemics were spaced over 20 years, nearly all important areas of New Brunswick and Nova Scotia have been hit almost at once. The effect on landings of oysters is already very severe and it will get worse.

If these fisheries are simply left alone, they might restore themselves from the resistant survivors, in the same way that Malpeque Bay did, that is, in about 20 years. This is too long to wait. Also, spawning is not as regular in northern New Brunswick as it is in Malpeque Bay and the period of recovery might therefore be even longer than 20 years there.

If resistant Prince Edward Island oysters are transferred to New Brunswick and Nova Scotia areas as breeding stock to assist the local survivors, then we can reasonably expect a period of recovery of about 10 years, as in Hillsborough Bay. The larger the number of oysters transferred and the greater the chance they are given to remain on the bottom and spawn, the better the chance of a short and successful recovery.

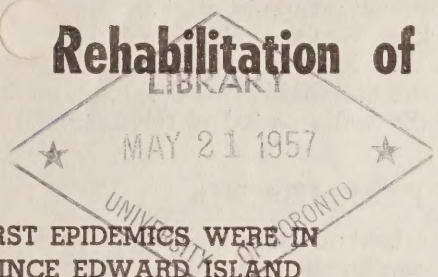
## THREE-YEAR REHABILITATION PROGRAM

Accordingly, the Department of Fisheries has initiated a program for the rehabilitation of stricken areas in New Brunswick and Nova Scotia to be carried out over a 3-year period. During this period 10,000 barrels of disease-resistant oysters, purchased by the Department of Fisheries in Prince Edward Island, will be transplanted to the stricken areas in New Brunswick and Nova Scotia.

Only sub-standard shape oysters will be used since we do not wish to interfere with the market production of Prince Edward Island. Since the market shape of oysters is determined by the conditions under which they grow, the spawn of these sub-standard oysters will develop to the usual market shape produced by the area to which the parent stock have been transferred.

Gov. Doc  
Can  
F  
SH  
37  
R345  
110.29  
Biological  
& Medical  
Serials

3 1761 11682300 6





### 1957 PHASE

The first transfer will take place during May and June of 1957 when 1,500 barrels of disease-resistant oysters will be handled. Of this quantity, 1,000 barrels will go to the Shippegan district of New Brunswick and 500 barrels to the Wallace-Malagash area of Nova Scotia. These areas were chosen for the first transplant since it is considered that stocks are most likely to be built up more quickly in areas where oyster farming is actively practised and since both these areas have suffered a heavy mortality.

### METHOD OF DISTRIBUTION

Of the 1,000 barrels to be transferred to the Shippegan district, 3 barrels will be given free of charge to each lessee for each lease he or she has in good standing, 100 barrels will be planted on the public fishery in South St. Simon Inlet and 100 barrels on the public fishery in North St. Simon Inlet. The balance will be planted on the Department's experimental reserve area in South St. Simon Inlet.

Of the 500 barrels to be transferred to the Wallace-Malagash area, 3 barrels will be given free of charge to each lessee for each lease he or she has in good standing. The remainder will be planted on the public fisheries in Malagash Basin and Wallace Harbour and on the Department's experimental reserve area in Malagash Basin.

### RESPONSIBILITY OF LESSEES

It will be the responsibility of the lessees to take delivery of the oysters to be planted on their leases

from the Department's vessels at either Shippegan, New Brunswick or Wallace, Nova Scotia and to plant them on their leases. It will also be their responsibility to see that these oysters remain on their leases during the entire period of rehabilitation.

### CONTROL OF PUBLIC FISHERIES

The public fisheries to which disease-resistant oysters have been transferred will be closed to public fishing during the period of rehabilitation. The full co-operation of all oyster fishermen who normally fish these beds is essential. The longer the disease-resistant oysters remain on these beds the sooner the beds will recover their normal production.

### 1958 PHASE

During 1958, 3,500 barrels of disease-resistant oysters will be transferred from Prince Edward Island and to other parts of New Brunswick and Nova Scotia that have been affected by the disease. Further investigation will be necessary before the exact locations of the transfers for this phase of the program can be established.

### 1959 PHASE

This final phase of the program will transfer 5,000 barrels of disease-resistant oysters to stricken areas in New Brunswick and Nova Scotia and again further investigations will determine the exact locations for this transfer.